Research guidance.

1. **Why is there a global energy crisis on planet earth?**

The global energy supply is facing a whole series hardly solvable problems that have worsened in recent months.

First of all geological, because the reserves of the once thought huge amount of oil, natural gas and coal deposits decreased.

And secondly, politically, as geopolitical changes and miscalculations have led to certain fossil energy resources which can be exploitet.

As problems worsen simultaneously on two levels, it seems to come bad in our future for our energy supply.

<http://www.monde-diplomatique.de/pm/2011/07/08.mondeText.artikel,a0001.idx,0>

1. **What are fossil fuels and how are they formed?** (**Was sind fossile Brennstoffe und wie werden sie gebildet)**

Natural gas, petroleum and coal are called fossil fuels. They originated from organisms of earlier times. we know very little of their past events.

<http://www.zum.de/Faecher/Ch/Saar/Handrchg/Kl11/hr_11_7.htm>

They are not called renewable energy because the reproducing takes hundrets of years.

<http://www.stromlieferant.info/FossileBrennstoffe.html>

**Formation of fossil fuels**

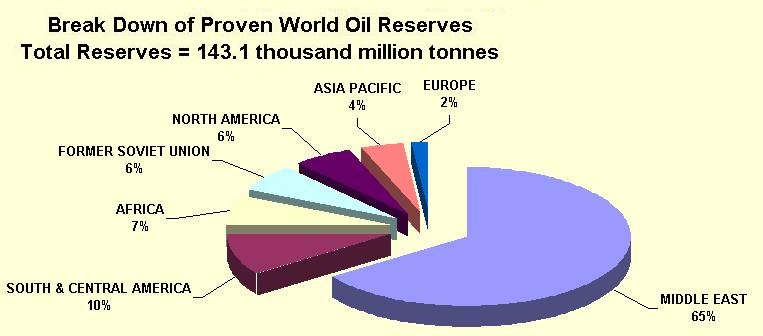
Coal, lignite, oil sands, oil shale, lignite, gas hydrates, natural gas, petroleum, peat, etc. are fossil fuels. They arose from the biomass of earlier times. The most important chemical reaction in the development of biomass is photosynthesis, a chemical reaction in which the carbon dioxide and water with help of light energy,

glucose and oxygen is produced:

  6 CO2 + 6 H2O + light energy → C6H12O6 + 6 O2

<http://www.farago.info/job/Brennstoffvorraete/Brennstoffe.htm>

1. **Which countries of the world have fossil fuels as their natural resources?**



**4. What are the major alternatives to fossil fuels? Explain in detail?**

* **Solar**
* **Nuclear**
* **Wind**
* **Hydroelectric**
* **Biomass**

**5. Draw a table and compare the advantages and disadvantages of each the alternatives to fossil fuels?**

|  |  |  |
| --- | --- | --- |
|  | Advantage | Disadvantage |
| Solar | * renewable * not limited * saves money * no fuels | * with power generation through the sun-> higher costs composed to other techniques * no constant energy supply( night) |
| Nuclear | * a million times more energy than wind energy * no release of greenhouse gases * high amount of energy can be generated from a single nuclear plant | * nuclear energy can be abused for nuclear weapons * requires large capital costs |
| Biomass | * available throughout the world * inexhaustible fuel source * alcohols and other fuels produced by biomass are efficient | * Could contribute a great deal to global warming * expensive source |
| Wind | * renewable * widely distributed * cheap * reducing toxic gas emissions | * a lot of turbines have to be built to generate a proper amount of windenergy * wind can never be predicted |
| Hydroelectric(water) | * no usage of fuel * amount of energy is stable | * aquatic ecosystems are affected immensly |